CLAIMS:

1. A method of creating an image, said image to be formed by rendering and compositing at least a plurality of graphical objects, each said object having a predetermined outline, said method comprising the steps of:

dividing a space in which said outlines are defined into a plurality regions, each said region being defined by at least one region outline substantially following at least one of said predetermined outlines or parts thereof and being substantially formed by segments of a virtual grid encompassing said space;

manipulating said regions to determine a plurality of further regions, wherein each said further region has a corresponding compositing expression;

classifying said further regions according to at least one attribute of said graphical objects within said further regions;

modifying each said corresponding compositing expression according to a classification of each said further region to form an augmented compositing expression for each said further region; and

compositing said image using each of said augmented compositing expressions.

2. A method according to claim 1, wherein said attribute is selected from the group consisting of colour, opacity and object outline.

3. A method according to claim 1, wherein said manipulating said regions comprises applying set operations to said regions.

4. A method according to claim 3, wherein said set operations include difference and/or intersection operations.

5. A method according claim 1, wherein said grid is regularly spaced and preferably orthogonally based.

6. A method according to claim 1, wherein said grid is irregularly shaped.

7. A method according to claim 1, wherein the compositing expression is a hierarchically structured representation of the image.

8.   A method according to claim 1, wherein said image is at least in part a pixel-based image.

5   9.   A method according to claim 1, wherein a flag is stored to indicate whether data of an object is opaque or ordinary.

10.   A method according to claim 9, wherein said compositing expression is optimized based on a value of said flag for contributing objects.

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11.   A method according to claim 1, wherein a wholly opaque object in said region acts to eliminate one or more objects within said region from said compositing expressions.

15   12.   A method according to claim 1, wherein a wholly transparent object in said region eliminates at least itself from said compositing expression.

13.   A method according to claim 1, wherein said modifying comprises modifying a manner in which said compositing expression is evaluated without 20   modifying said hierarchically structured representation.

14.   A method of creating an image, said image to be formed by rendering and compositing at least a plurality of graphical objects, each said object having a predetermined outline, said method comprising the steps of:

25   dividing a space in which said outlines are defined into a plurality regions, each said region being defined by at least one region outline substantially following at least one of said predetermined outlines or parts thereof and being substantially formed by segments of a virtual grid encompassing said space, wherein each object has two region outlines arranged either side of said predetermined outline to thus define three regions for 30   each said object, and wherein each said region has a corresponding compositing expression;

classifying said regions according to at least one attribute of said graphical objects within said regions;

modifying each said corresponding compositing expression according to a 35   classification of each said region to form an augmented compositing expression for each

said region; and

compositing said image using each of said augmented compositing expressions.

15.   A method according to claim 14, wherein said attribute is selected from the group consisting of colour, opacity and object outline.

16.   A method according to claim 14, wherein said grid is regularly spaced and preferably orthogonally based.

17.   A method according to claim 14, wherein said grid is irregularly shaped.

18.   A method according to claim 14, wherein said compositing expression is a hierarchically structured representation of the image.

19.   A method according to claim 14, wherein said image is at least in part a pixel-based image.

20.   A method according to claim 14, wherein a flag is stored to indicate whether data of an object is opaque or ordinary.

21.   A method according to claim 20, wherein said compositing expression is optimized based on a value of said flag for contributing objects.

22.   A method according to claim 14, wherein a wholly opaque object in said region acts to eliminate one or more objects within said region from said compositing expressions.

23.   A method according to claim 14, wherein a wholly transparent object in said region eliminates at least itself from said compositing expression.

24.   A method according to claim 14, wherein said modifying comprises modifying a manner in which said compositing expression is evaluated without modifying said hierarchically structured representation.

25.   An apparatus for creating an image, said image to be formed by rendering and compositing at least a plurality of graphical objects, each said object having a

predetermined outline, said apparatus comprising:

dividing means for dividing a space in which said outlines are defined into a plurality regions, each said region being defined by at least one region outline substantially following at least one of said predetermined outlines or parts thereof and

5   being substantially formed by segments of a virtual grid encompassing said space;

manipulating means for manipulating said regions to determine a plurality of further regions, wherein each said further region has a corresponding compositing expression;

classifying means for classifying said further regions according to at least one

10   attribute of said graphical objects within said further regions;

modifying means for modifying each said corresponding compositing expression according to a classification of each said further region to form an augmented compositing expression for each said further region; and

compositing means for compositing said image using each of said augmented

15   compositing expressions.

26.   An apparatus according to claim 25, wherein said attribute is selected from the group consisting of colour, opacity and object outline.

20   27.   An apparatus according to claim 25, wherein said manipulating aid regions comprises applying set operations to said regions.

28.   An apparatus according to claim 27, wherein said set operations include difference and/or intersection operations.

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29.   An apparatus according to claim 25, wherein said grid is regularly spaced and preferably orthogonally based.

30.   An apparatus according to claim 25, wherein said grid is irregularly

30   shaped.

31.   An apparatus according to claim 25, wherein said compositing expression is a hierarchically structured representation of the image.

35   32.   An apparatus according to claim 25, wherein said image is at least in part

a pixel-based image.

33.　　An apparatus according to claim 25, wherein a flag is stored to indicate whether data of an object is opaque or ordinary.

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34.　　An apparatus according to claim 33, wherein said compositing expression is optimized based on a value of said flag for contributing objects.

35.　　An apparatus according to claim 25, wherein a wholly opaque object in
10　　said region acts to eliminate one or more objects within said region from said compositing expressions.

36.　　An apparatus according to claim 25, wherein a wholly transparent object in said region eliminates at least itself from said compositing expression.

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37.　　An apparatus according to claim 25, wherein said modifying comprises modifying a manner in which said compositing expression is evaluated without modifying said hierarchically structured representation.

20　　38.　　An apparatus for creating an image, said image to be formed by rendering and compositing at least a plurality of graphical objects, each said object having a predetermined outline, said apparatus comprising:

dividing means for dividing a space in which said outlines are defined into a plurality regions, each said region being defined by at least one region outline
25　　substantially following at least one of said predetermined outlines or parts thereof and being substantially formed by segments of a virtual grid encompassing said space, wherein each object has two region outlines arranged either side of said predetermined outline to thus define three regions for each said object, and wherein each said region has a corresponding compositing expression;

30　　classifying means for classifying said regions according to at least one attribute of said graphical objects within said regions;

modifying means for modifying each said corresponding compositing expression according to a classification of each said region to form an augmented compositing expression for each said region; and
35　　compositing means for compositing said image using each of said augmented

compositing expressions.

39.   An apparatus according to claim 38, wherein said attribute is selected from the group consisting of colour, opacity and object outline.

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40.   An apparatus according to claim 38, wherein said grid is regularly spaced and preferably orthogonally based.

41.   method according to claim 38, wherein said grid is irregularly shaped.

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42.   An apparatus according to claim 38, wherein said compositing expression is a hierarchically structured representation of the image.

43.   An apparatus according to claim 38, wherein said image is at least in part
15   a pixel-based image.

44.   An apparatus according to claim 38, wherein a flag is stored to indicate whether data of an object is opaque or ordinary.

20   45.   An apparatus according to claim 44, wherein said compositing expression is optimized based on a value of said flag for contributing objects.

46.   An apparatus according to claim 38, wherein a wholly opaque object in said region acts to eliminate one or more objects within said region from said
25   compositing expressions.

47.   An apparatus according to claim 38, wherein a wholly transparent object in said region eliminates at least itself from said compositing expression.

30   48.   An apparatus according to claim 38, wherein said modifying comprises modifying a manner in which said compositing expression is evaluated without modifying said hierarchically structured representation.

49.   A computer program product including a computer readable medium
35   having a plurality of software modules for creating an image, said image to be formed by

rendering and compositing at least a plurality of graphical objects, each said object having a predetermined outline, said computer program product comprising:

dividing module for dividing a space in which said outlines are defined into a plurality regions, each said region being defined by at least one region outline substantially following at least one of said predetermined outlines or parts thereof and being substantially formed by segments of a virtual grid encompassing said space;

manipulating module for manipulating said regions to determine a plurality of further regions, wherein each said further region has a corresponding compositing expression;

classifying module for classifying said further regions according to at least one attribute of said graphical objects within said further regions;

modifying module for modifying each said corresponding compositing expression according to a classification of each said further region to form an augmented compositing expression for each said further region; and

compositing module for compositing said image using each of said augmented compositing expressions.

50.   A computer program product according to claim 49, wherein said attribute is selected from the group consisting of colour, opacity and object outline.

51.   A computer program product according to claim 49, wherein said manipulating said regions comprises applying set operations to said regions.

52.   A computer program product according to claim 51, wherein said set operations include difference and/or intersection operations.

53.   A computer program product according to claim 49, wherein said grid is regularly spaced and preferably orthogonally based.

54.   A computer program product according to claim 49, wherein said grid is irregularly shaped.

55.   A computer program product according to claim 49, wherein said compositing expression is a hierarchically structured representation of the image.

56.   A computer program product according to claim 49, wherein said image is at least in part a pixel-based image.

57.   A computer program product according to claim 49, wherein a flag is 5   stored to indicate whether data of an object is opaque or ordinary.

58.   A computer program product according to claim 57, wherein said compositing expression is optimized based on a value of said flag for contributing objects.

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59.   A computer program product according to claim 49, wherein a wholly opaque object in said region acts to eliminate one or more objects within said region from said compositing expressions.

15   60.   A computer program product according to claim 49, wherein a wholly transparent object in said region eliminates at least itself from said compositing expression.

61.   A computer program product according to claim 49, wherein said 20   modifying comprises modifying a manner in which said compositing expression is evaluated without modifying said hierarchically structured representation.

62.   A computer program product including a computer readable medium having a plurality of software modules for creating an image, said image to be formed by 25   rendering and compositing at least a plurality of graphical objects, each said object having a predetermined outline, said computer program product comprising:

dividing module for dividing a space in which said outlines are defined into a plurality regions, each said region being defined by at least one region outline substantially following at least one of said predetermined outlines or parts thereof and 30   being substantially formed by segments of a virtual grid encompassing said space, wherein each object has two region outlines arranged either side of said predetermined outline to thus define three regions for each said object, and wherein each said region has a corresponding compositing expression;

classifying module for classifying said regions according to at least one attribute 35   of said graphical objects within said regions;

modifying module for modifying each said corresponding compositing expression according to a classification of each said region to form an augmented compositing expression for each said region; and

compositing module for compositing said image using each of said augmented

5   compositing expressions.

63.   A computer program product according to claim 62, wherein said attribute is selected from the group consisting of colour, opacity and object outline.

10   64.   A computer program product according to claim 62, wherein said grid is regularly spaced and preferably orthogonally based.

65.   method according to claim 62, wherein said grid is irregularly shaped.

15   66.   A computer program product according to claim 62, wherein said compositing expression is a hierarchically structured representation of the image.
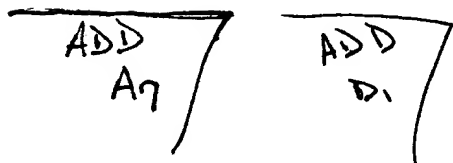

67.   A computer program product according to claim 62, wherein said image is at least in part a pixel-based image.

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68.   A computer program product according to claim 62, wherein a flag is stored to indicate whether data of an object is opaque or ordinary.

69.   A computer program product according to claim 68, wherein said

25   compositing expression is optimized based on a value of said flag for contributing objects.

70.   A computer program product according to claim 62, wherein a wholly opaque object in said region acts to eliminate one or more objects within said region from

30   said compositing expressions.

71.   A computer program product according to claim 62, wherein a wholly transparent object in said region eliminates at least itself from said compositing expression.

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72.   A computer program product according to claim 62, wherein said modifying comprises modifying a manner in which said compositing expression is evaluated without modifying said hierarchically structured representation.